

NUCLEAR DETERRENCE IN THE 21ST CENTURY

BY

COMMANDER TREVOR N. TYLER
United States Navy

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U.S. Army War College, Carlisle Barracks, PA 17013-5050

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USAWC STRATEGY RESEARCH PROJECT

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Commander Trevor N. Tyler
United States Navy

Captain Al Lord
Project Adviser

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U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

ABSTRACT

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The end of the Cold War and the desire to rid the world of nuclear weapons did not make nuclear deterrence irrelevant. Nuclear weapons continue to play a key role in this nation's strategic deterrence. During the cold war the nuclear triad was the successful nuclear deterrence strategy. Recent changes to the political landscape, to include an increase in the number of nuclear actors, have prompted a change to the tried and true nuclear deterrence Triad. Better national diplomacy is needed in the nuclear deterrence strategy and will need to be sustained with relevant and capable nuclear and new conventional weapons.

NUCLEAR DETERRENCE IN THE 21ST CENTURY

At the end of the Cold War, people like Sir Joseph Rotblat, 1995 Nobel Peace Laureate, wished to eliminate nuclear weapons from the world—but once man's nuclear innocence is lost it cannot be regained.¹ Even if all the nuclear arsenals were destroyed, the know-how would still remain and the ability to make more will never go away. As long as we have nuclear weapons, any would be attacker has to consider the cost of a nuclear response. As the world's preeminent military power, the United States would not want to leave itself vulnerable to nuclear attacks without a means of retaliation. The United States must keep a strong deterrence posture. The end of the Cold War did not make nuclear weapons irrelevant; nuclear weapon strategy must continue to play a part in the theory of war and adapt to a continually changing political environment.

This paper will start with a look at the history of nuclear weapons and how recent changes in politics and ideologies effect nuclear strategy. It will discuss how the end of the Cold War and 9-11 has changed this strategy. This paper will explore how change in the political landscape has also brought a change in the actors—new and existing actors change the way nuclear war will be fought and what characteristics constitute modern nuclear war. This paper will also project how nuclear deterrence will continue to be a vital part of our national strategy.

Nuclear Deterrence: A Brief History

The first atomic weapon was tested in New Mexico in July of 1945, one month later the next two nuclear weapons were dropped on Japan and the world was suddenly changed forever. Use of the first weapons seemed necessary to end the war in the

shortest time and prevent the estimated one million American casualties required to invade the island of Japan. But, there was more to the decision of using the bomb on a civilian target. Besides bringing World War II in the Pacific to an end, it was also meant to be a demonstration to the rest of the world. As Karl Compton, one of Truman's advisers wrote at the time: "If the bomb were not used in the present war the world would have no adequate warning as to what was to be expected if war should break out again."² This demonstration has proven to be effective up to the present day.

After 63 years, Compton's statement seems to be remarkably prophetic. With the use of only two nuclear weapons and with the Soviet's development of the bomb in 1949, the nuclear war strategy changed to battle avoidance also known as deterrence. Some would say that the study of nuclear war is the study of the non-use of these weapons.³ According to Clausewitz "Combat is the only effective force of war; its aim is to destroy the enemy's forces...that holds true even if no actual fighting occurs, because the outcome rests on the assumption that if it came to fighting, the enemy would be destroyed."⁴ If there was a nuclear war between super powers, the assumption is that both sides would be destroyed, otherwise known as mutually assured destruction.

In 1968, growing concerns for the proliferation of nuclear weapons lead to the 18-nation Disarmament Commission which drafted the Nonproliferation Treaty (NPT). This treaty recognized five nations as possessing nuclear weapons; United States, Russia, China, United Kingdom, and France.⁵ These countries had all conducted nuclear detonation tests. Such a test not only demonstrated technical capability but also indicated that the state had made a nuclear commitment; testing was a membership

claim to the nuclear club, a way to acknowledge the state's new international status and remove political ambiguity.⁶

Non-nuclear signatories to the treaty agreed to forgo nuclear weapons based on two concessions by the nuclear states. First, all nations had the right to the use of nuclear energy for peaceful purposes and that states should share technology and material for the peaceful use of the atom. Second, the nuclear states would stop the arms race and commit to total nuclear disarmament.⁷ No time frame was set for disarmament negotiations, and 40 years later, despite the end of the cold war, all five nations maintain a nuclear arsenal.

A Change in the Actors

The largest and most obvious change to nuclear strategy since the end of the cold war is that the United States can no longer focus on one enemy in a bipolar world. Now the United States faces a number of states and terrorist groups attempting to attain Weapons of Mass Destruction. The current environment has three types of nuclear actors; near peer competitors, rogue nations, and terrorists.

Near Peer Competitors

Even with the fall of the Soviet Union, two countries maintain an adequate nuclear arsenal to be referred to as near peer competitors; Russia and China. Of the other five original nuclear weapons club members, the United Kingdom and France, are allies to the United States and did not build up an arsenal of nuclear weapons at a rate to become true competitors. During the Cold War the United States designed its strategic nuclear forces to deter a single foe, the Soviet Union, and generally treated all others as a lesser included nominal threat. With the fall of the Soviet Union, United States and

Russia have entered a new era of nuclear arms limitations. Under the terms of a 2002 arms control treaty between the United States and Russia, the two countries committed to reducing the number of deployed warheads from approximately 6,000 each to between 1,700 and 2,200 by 2012.⁸ In doing so, Moscow and Washington preserve their nuclear deterrent as the ultimate weapon in total war and weapons of coercion in crises short of war and regional conflicts.

For Russia the stakes in these arms reductions are high. Russia is challenged to maintain their viability of nuclear deterrence while modernizing its conventional armed forces. Russia's strategic and nuclear forces will be tasked for years to cover contingencies that would be handled by United States conventional forces under comparable conditions of threat of military action. Russia's nuclear forces must therefore provide for expanded deterrence against the possibility of conventional attack on or near its periphery.⁹ Russia remains in transition; it is not an adversary but cannot be counted on as a traditional ally.

While the United States and Russia continue to scale down their nuclear arsenal, China continues to build up and modernize its nuclear weapons. China has devoted some effort in developing nuclear bomber capability, but its bombers remain old, highly vulnerable and unable to reach the continental United States.¹⁰ Beijing has also pursued submarine launched ballistic missiles for decades, but until recently only had one such submarine with medium range missiles. According to a recent report by the United States Office of Naval Intelligence, China plans to build five new Type 094 ballistic missile submarines.¹¹ This would give China the ability to have continual at sea nuclear strike capability. But most of China's emphasis has been land-based missiles.

China has been avoiding negotiation constraints on its modest nuclear arsenal. In the cold war, Beijing argued that arms control was an instrument to preserve the hegemony of the bipolar superpowers. In the 80's, China refused to enter arms negotiations until the two major powers reduced their arsenal by 50 percent. When the Soviet Union and the United States reduced their arsenal to 60 percent, China changed its target to 400 warheads each. Even though Beijing will not negotiate to lower its arsenal, it has become more cooperative in dealing with rouge states.

China is one of the players in the "six party talks" which includes China, Russia, Japan, the United States, and North and South Korea. China has played a vital role in initiating the talks in 2003 and in keeping them going over the past three years¹². China has also been part of the UN Security Council that has levied sanctions against Iran trying to get them to give up their nuclear weapons program. Beijing earns credit as the honest broker in these talks and projects itself as a responsible power in the international arena. More action by the nuclear powers of the world will be required in order to contain rogue nation-states nuclear ambitions.

Rogue Nations

For the purposes of this paper a rogue nation is one that is operating outside of the Nonproliferation Treaty (NPT). There are three non-signatories that have obtained nuclear weapons after the 1968 signing, Israel, India, and Pakistan.¹³ There are also four members of the NPT that have cheated; Iraq, Libya, North Korea, and Iran. Of these NTP violators, Iraq and Libya are no longer of nuclear proliferation concern, while the verdict is still out on Iran's intentions.¹⁴ A criterion to determine the level of threat of a rogue nation is the willingness of the state to cooperate with the international

community to safeguard its nuclear weapons. Similarly, a rogue nation would be more of a menace if the action or rhetoric of its leaders were contrary to world peace. In this same vein, a state that funded and supported terrorists would be considered a greater threat.

Israel was in a position to perform a full yield nuclear test in the latter half of 1966. Had Israel conducted a test that year, it could have become the sixth member of the NTP as a declared nuclear state. As a matter of international law, there was nothing illegal about following that path. After all, China and France had just tested a few years earlier. Israel's strategic situation and unique relationship with the United States, however, made it fundamentally different from previous proliferators.¹⁵

Israel made a nonintroduction commitment to the Kennedy administration. This pledge, which meant Israel would not be the first to introduce nuclear weapons to the Middle East, was a key pillar in the United States - Israeli security relationship. The Israeli leadership committed to the pledge as part of their strategic interest in keeping nuclear weapons out of the Middle East.¹⁶

Threatened just prior to the Six-Day War, in 1967, Israeli teams assembled all the components, including the handful of nuclear cores it had, into operational explosive devices. Actual assembly of all the components signified that Israel had become a nuclear power. Israel would ultimately decide not to sign the NPT and its retention of nuclear weapons was firmly established.¹⁷ Israel has proven itself to be a responsible nuclear power for 40 years, but there is a concern that if Israel's existence is threatened again it may resort to a nuclear option.

India first tested a nuclear weapon in 1974 and again in 1998. The United States had led the world in erecting and upholding barriers to India's participation in the global nuclear fuel and technology market because some parts of the device used in India's 1974 explosion originated from Canadian and United States exports designated for peaceful purposes. Recently the Bush administration has sought to end India's nuclear isolation in order to draw India closer to the United States. Opponents of this exchange fear that it will weaken the Nonproliferation Treaty.

India is attempting to backdoor its way into the NTP by securing a safeguards agreement with the International Atomic Energy Agency (IAEA) to cover nuclear facilities and materials that India declares are used for civilian purposes. Safeguards are measures, such as inspections and remote monitoring, to ensure that civil nuclear programs are not used to make nuclear weapons. But India intends to maintain eight nuclear power plants in the military sector to maintain a firm hold on its nuclear weapons capabilities.¹⁸ Because of its willingness to work with the international community, India is not considered a serious threat to world stability, but it is a regional concern due to its history of confrontation with Pakistan.

Spurred by the Indian nuclear test in 1998, Pakistan demonstrated its nuclear capability in 1998 after 25 years of opaqueness.¹⁹ Popular unrest because of Pakistani President Pervez Musharraf's recent decision to suspend the constitution and declare a national emergency raised concern among Western nations about the safety and security of Pakistan's nuclear arsenal. The actions of Abdul Qadeer Khan from the late 1980s through the 1990s led to transfer of sensitive technologies to Iran, Libya, and North Korea. With known al-Qaeda and Taliban extremists in the border regions of

Afghanistan and Pakistan, to possibly include Osama Bin Laden, there is a fear that nuclear assets or technologies will fall into the hands of terrorists.²⁰

Recognizing the international concerns regarding its proliferation threat, Pakistan established a central command-and-control system to manage nuclear infrastructure and strategic assets. The two most prominent creations were the National Command Authority and the Strategic Plans Division. The creation of these agencies was important in changing the mindset inside the Pakistani nuclear structure, especially among individuals and facilities that previously had operated autonomously or with minimal oversight or auditing.²¹ Despite these measures, the concerns of nuclear leakage and seizure of nuclear assets by radical groups or individuals remains. Pakistan is willing to engage with international partners in an attempt to further strengthen its security and control processes of nuclear weapons. But regardless of its recent efforts, the mistakes of the past and the global uneasiness caused by unrest in Pakistan, shows the need to minimize the number of nations with nuclear weapons.

North Korea stands as failure of nonproliferation. North Korea was an original signatory of the NPT. But after a stand off with the Bush administration and the President's state of the union address that labeled North Korea as one of the axis of evil, North Korea expelled the IAEA inspectors and withdrew from the NPT in 2002. Rather than recognizing that states most often seek nuclear weapons when they feel insecure, the administration pushed one of the world's most fragile and dangerous regimes into a perceived corner. The result was North Korea's nuclear detonation test in 2006. With its possible ties to terrorism and its defiance of the international community, North Korea is clearly a serious nuclear threat.

A nuclear Iran could pose the greatest threat to United State's interests. Anti-Americanism is an integral part of the Islamic Republic's identity. Because of Iran's demonstrated support of terrorism, there is a fear that Iran would give nuclear weapons to terrorists. Additionally, deterring or containing Iran also achieves three national strategic objectives: maintaining the flow of oil onto world markets, preventing a hostile state from dominating the region, and minimizing the terrorist threat.²² Because of such vital interests, the United States must proceed carefully in its deterrence posture toward Iran.

The United States should exercise extreme caution when considering any direct military action or regime change with regard to Iran. Previous actions in Iraq and Afghanistan have provided valuable lessons about military action and regime change. First, the world community is more likely to support military action if there has been an actual attack by forces of a rogue nation. The world community is less likely to provide the same support in a preemptive action. Secondly, regime change is costly and even more so when done unilaterally. Unilateral action could also reduce American's credibility at home and abroad. Military action in the Middle East would send shock waves through the world energy market and the global economy.²³ For these reasons, military intervention in Iran should be held as a last resort.

If Iran obtained nuclear weapons in the future, the United States should not first turn to military action, but rather it should use diplomacy. First, deter Iran from ever using its nuclear weapons. This could be done through the use of the new TRIAD that contains both conventional and nuclear options. Secondly, prevent Iran from using its nuclear status to increase its influence in the region. Fortunately, nuclear weapons have

proven to be poor tools for coercive diplomacy against states that already possess nuclear weapons or who may be allied with a nuclear power.²⁴ Therefore, Iran's influence in the region could be reduced by bolstering United State's security guarantees with other countries in the region. Thirdly, Iran should be diplomatically engaged in a meaningful way that encourages the creation of a government friendly to the United States and its regional allies, one that does not sponsor terrorism. Finally, such a policy should reassure US allies in the region that America's commitment to their security is steadfast.²⁵

The United States should work harder to prevent proliferation rather than accept what appears to be impossible to stop. Several nations have been deterred in the past. Western Germany and Japan decided that it was safer to reside under the United States nuclear umbrella. South Korea and Taiwan gave up their nuclear ambitions when the United States threatened to sever relations with them.²⁶ The bottom line; twenty years ago, nine states had nuclear weapons; today, that number has not changed. South Africa removed itself from the list, becoming the first case of real nuclear disarmament, and only North Korea joined the list. This is a remarkable record of success—particularly since that 20-year interval included the breakup of the Soviet Union and the entire period of the Khan's network activities.²⁷ The lesson of the past is not that all countries that desire a nuclear arsenal eventually get it, but rather if the right diplomatic tools are brought to bear countries can be dissuaded from their nuclear ambitions.

Nuclear Terrorists

A more ominous threat to the United States national security is weapons of mass destruction in the hands of terrorists. Although weapons of mass destruction have been around for decades, the new dimension of the threat to the United States is that terrorists will gain access to these mass casualty weapons. According to the National Security Strategy, "there are few greater threats than a terrorist attack with weapons of mass destruction."²⁸ During the cold war the United States faced a status quo, risk-averse adversary. Nuclear weapons, which were then seen as weapons of last resort, are now the weapons of choice for terrorists. "Traditional concepts of deterrence (i.e. second strike capability) will not work against a terrorist enemy whose avowed tactics are a wonton destruction and the targeting of innocents."²⁹

Terrorists have become more of a concern because of the increased proliferation and the deterioration of command and control over nuclear material by the former Soviet Union and rogue nations (known as "loose nukes").³⁰

The prospect of a terrorist with weapons of mass destruction has led the Bush administration to advocate a preemption doctrine.

The United States has long maintained the option of preemptive actions to counter a sufficient threat to our national security. The greater the threat, the greater the risk of inaction - and the more compelling the case for taking anticipatory action to defend ourselves, even if uncertainty remains as to the time and place of the enemy's attack. To forestall or prevent such hostile acts by our adversaries, the United States will, if necessary, act preemptively.³¹

It was this preemption doctrine that led President Bush to action against Iraq. Based on fear that Saddam Hussein had weapons of mass destruction and ties to terrorist groups, the president's case for war was based on the argument that deterrence and containment would not continue to work.

The nuclear terrorist creates a serious threat because these actors are extraordinarily difficult to deter. First, they are willing to die. Secondly, they provide limited targets to hold at risk. And finally, striking the terrorist with nuclear weapons becomes problematic. The backlash caused by the United States detonating a nuclear weapon in a third party country to take out a few terrorists would be severe. A nuclear retaliatory strike may be just what a terrorist group like Al Qaeda wants the United States to do. The devastation that would follow such a strike would be used as propaganda to prove that the United States is the great Satan.³² This is precisely why policy makers need more flexible options, nuclear and non-nuclear to defeat enemies of peace when they attack or deter plans for attack.

In addition, the United States must strengthen passive security measures to include increased boarder and port security. Containers carried by ship, train, or truck have become a perfect vessel for the smuggling of just about anything including nuclear weapons. As a result, nations the world over are now searching for new technology capable of searching every single box that crosses their borders. In addition, there are new United States government initiatives aimed to enlist the help of other countries in identifying suspicious containers in ports of origin before they're loaded onto ships bound for the United States.³³ Security measures and domestic defenses will reduce the number of successful attacks and will hopefully prevent a nuclear attack. But if terrorists are successful, the United States must be ready with a crisis response to reduce the impact of a successful attack.

Clearly the nuclear deterrence stage is no longer bipolar. The changing environment; with three different types of adversaries, near peer competitor, rogue

nations, and terrorists; call for a change in nuclear deterrence strategies. The next section will examine the recent changes to the national deterrence strategies.

A Change in the Strategy

National Security Strategy

Our national nuclear deterrence strategy starts with the National Security Strategy. The 2006 National Security Strategy acknowledges the largest challenge for nuclear deterrence is counter-proliferation. Iran continues to violate the Non-Proliferation Treaty and continues to pursue its nuclear program without an objective guarantee that its program is solely for peaceful purposes. As of this writing North Korea, agreed to disable its nuclear reactor complex and declare all of its nuclear programs. It is still too early to determine if these recent agreements, made possible by the efforts of the Six Party Talks, will have success in the long term. Terrorist groups, including al-Qaeda, continue to pursue obtaining nuclear weapons. And some of the world's weapons-grade fissile material is not properly secured. The United States must remain committed to keep the world's most dangerous weapons out of the hands of the world's most dangerous people.³⁴

Nuclear weapons are unique in that they can inflict massive and instant loss of life. For this reason they provide a special appeal to terrorist and rouge states. According to the National Security Strategy, the best way to block aspiring nuclear states and nuclear terrorists is to focus on controlling fissile material by focusing on two objectives.

The first objective is to keep states from acquiring the capability to produce weapons grade fissile material. The National Security Strategy points to a loophole in the Non-Proliferation Treaty that allows states to produce weapons grade fissile material

under the cover of a civilian nuclear power program. The strategy calls for leading nuclear exporters to provide a safe and orderly system to provide reliable access to reasonable cost fuel for civilian nuclear power plants. In exchange for this access to fissile material for nuclear power plants, states would remain transparent and would renounce enrichment and reprocessing capabilities that could produce nuclear weapons.³⁵

The second objective is to keep fissile material out of the hands of terrorists. The National Security Strategy points to the Global Threat Reduction Initiative. This initiative addresses the danger posed by inadequately safeguarded nuclear materials worldwide. Nuclear stockpiles are located, tracked, and reduced. Nuclear material trafficking is discouraged by placing detection equipment in key shipping nodes and targeting maritime, air, and land shipping routes. The United States also leads an effort to cut off proliferators from their financial resources needed to fund their activities.³⁶

Nuclear Posture Review

The Bush administration has improved the flexibility of the theory of nuclear war by revamping the strategic triad. The old strategic triad was developed to frustrate a Soviet nuclear first strike. The new legs of triad, as revealed by the January 2002 Nuclear Posture Review are: offensive strike systems (both nuclear and non-nuclear); defense (both active and passive); and revitalized defense structure.³⁷ The new triad is a response to the changing deterrence environment. First, it recognizes Russia is no longer the only or even the most important nuclear threat. Secondly, it improves flexibility for the policy makers to respond to aggression in appropriate ways. And

finally, it eases bureaucratic resistance to changing the bedrock foundation of nuclear deterrence and paves the way for the implementation of a tailored nuclear deterrence.³⁸

The role of deterrence as executed during the cold war still applies. Although Russia no longer has a large arsenal, it still maintains enough nuclear weapons to pose a serious threat to the United States. China is possibly even a bigger near peer competitor. United States must not take China for granted. As long as the economic ties between the two countries continue to grow, a serious military confrontation is unlikely. Still, the United States must maintain the most capable nuclear arsenal to deter both of these near peer competitors.

The nuclear weapons posture with China and Russia could be similar to the cold war due to their relatively large nuclear arsenals. However, owing to common interests in preventing the spread of nuclear weapons, political cooperation should be fostered by the United States. While maintaining enough nuclear weapons to hedge against a first strike, these countries should strive to avoid an arms race among themselves similar to the cold war by deemphasizing nuclear competition.³⁹

Department of Defense Deterrence Joint Operating Concept

The Secretary of Defense approved the Deterrence Operations Joint Operations Concept in December 2006. This is one of the core competencies developed to address the complex and uncertain global security environment characterized by asymmetric threats from international organizations, nation-states, rogue states and terrorist organizations. The Joint Operations Concepts identify future military problems and proposes solutions for ways to conduct operations. This concept was written to identify a new way of conducting deterrence paired with a wider range of joint military options.⁴⁰

The central idea or purpose of the Deterrence Operations Joint Operations Concept is to decisively influence the adversary's decision making process in order to prevent hostile action against United States' vital interests.⁴¹ The concept does not focus on nuclear deterrence or even deterrence of weapons of mass destruction. The frame work that is outlined would be applicable to nuclear deterrence but the operational concept is broader to address the far more diverse and less predictable threats to the United States national interest since the end of the Cold War.

The Deterrence Operations Joint Operations Concept identifies four key aspects to the military problem that will need to be addressed in order to be successful at deterrence beyond 2012. First, there will be a wide array of adversaries who's political, cultural, ideological, and religious values and goals are different than the United States. These differences will complicate the United States' effort to understand and influence their perceptions. Secondly, some adversaries may perceive their stake in the outcome of the crisis/conflict to be great enough to act regardless of the United States's military superiority. The differential between stakes (asymmetry of stakes versus asymmetry of power) can undermine the effectiveness of deterrence. Thirdly, the technological superiority that provides the United States with a competitive edge also creates vulnerabilities that adversaries might exploit. And finally, the emergence of a multi polar world since the fall of the Soviet Union has increased the threat that non-state actors pose to the United States' vital interests. The differences in state and non-state actors significantly affect the ways in which the operational concepts apply.⁴²

The Deterrence Operations Joint Operating Concept describes an adversary's decision calculus with three primary variables: the benefit of an action, the cost of an

action, and the consequences of restraint or inaction. Therefore the methods to achieve deterrence or the "ways" are as follows; threaten to deny benefits, threaten to impose cost, and convince the adversary that not taking the action will result in an outcome acceptable to him.⁴³

The capabilities or "means" of the operating concept is discussed and the document concludes by detailing a comprehensive implementation plan complete with risk, mitigations, and metrics for assessment. The implementation stresses that each adversary requires a deterrence strategy specifically tailored to address their particular decision making attributes under a variety of circumstances.⁴⁴ Overall this document provides a new and affective approach to understanding the ways and means necessary to achieve the end of deterrence. This document is very useful in that it expands the role of deterrence away from that of the Cold War deterrence which relied on mutual assured destruction between to bi-polar superpowers. In today's environment (and for the foreseeable future), the range of required means to effectively deter extends beyond those available to the Department of Defense alone. The national deterrence strategy must bring to bear all elements of national power and reach into other interagency departments and across to our international partners.⁴⁵

The United States must deter nuclear aggression. This will be difficult since some nations are more likely to use their nuclear weapons in regional threats and thus are less likely to be deterred by the United States nuclear arsenal. The top regional threats are Iran versus Israel, Pakistan versus India, and North Korea versus South Korea. Two of these, Iran and North Korea (Iraq was the third) were labeled as the axis of evil by President Bush in his January 2002 State of the Union Address.⁴⁶ The President

was using tough talk to try to dissuade these nation-states from building and proliferating weapons of mass destruction. This is the main reason the nuclear triad had to change. The policy makers need more flexible and credible options both nuclear and non-nuclear to deal with these rogue nations.

Change in Systems

Is there any scenario that the United States' public or the world population would accept or even demand the use of nuclear weapons?⁴⁷ Some people think the use of nuclear weapons would be a crime against humanity; the aforementioned Sir Joseph Rotblat questions if use of nuclear weapons is a crime against humanity, how could a threat of their use ever be justified?⁴⁸ This extreme position shows the emotion that can be stirred by this topic. Some fear that updating our nuclear arsenal would pull us into the conflict it is intending to deter.⁴⁹ A counter argument says that the United States must update its arsenal to have the strongest deterrent; as President Bush said, "the President must have all options available to make that deterrent have meaning."⁵⁰

Even though there has been a great reduction in nuclear warheads and bombs, from 12,000⁵¹ in the early 1990's to a projected goal of 1,700-2,200 operationally deployed strategic nuclear warheads by 2012,⁵² significant resources must be allocated for maintenance and disposal of a nuclear arsenal. Nuclear warheads have not been built since 1989 in the United States. Existing weapons are expected to remain operational for many decades and perform exactly as designed despite lasting past the original design life expectancy of 20 years.⁵³

A debate is brewing about the ends, ways, and means of nuclear weapons. Since the utility of nuclear weapons is being reduced some feel that we have added too much

risk to the security strategy. In July 2007, the Secretary of Energy, the Secretary of Defense, and the Secretary of State made a statement to urge congress to support the Reliable Replacement Warhead program because “we are concerned for the long-term ability of the United States to sustain its strategy of deterrence, meet its security commitment to allies, and pursue further reductions in nuclear weapons without additional risk.”⁵⁴

The National Security Strategy, the New Triad, and the Department of Defense Deterrence Joint Operating Concept have all reduced the reliance on a nuclear force. However, even as the number of nuclear warheads should be reduced, the nuclear weapon still plays a vital role in the United State's overall security strategy. The nuclear weapon is still the best insurance policy for an uncertain future. Several countries possess nuclear weapons and other weapons of mass destruction. The United States nuclear weapons provide deterrence against such threats by holding at risk those elements of power that an adversary values.⁵⁵ While nuclear weapons cannot be relied upon to deter terrorist use of weapons of mass destruction, they can be used to prevent proliferation from a rogue nation or a terrorist.

Conventional forces could be used to neutralize such a threat if they were properly equipped and positioned in proximity to the emerging threat. But these forces cannot be in every place at the crucial time when the opportunity arises to a potential attack. If these forces cannot be positioned to respond rapidly it is prudent to have the capability to defeat attacks or destroy high value or fleeing targets at global ranges rather than suffer the consequences of an attack.⁵⁶

Today, the old conventional Triad is still the best treat to engage distant, fleeting targets twenty-four hours a day seven days a week.⁵⁷ The Land Based Continental Ballistic Missiles (LCBMs) are maintained at high alert and can be launched on short notice. The MX/Peacekeeper missiles have been deactivated but the Minuteman missile force continues to be modernized to improve the weapon's accuracy and reliability and extend its service life past 2020.⁵⁸ The United States has two types of long-range heavy bombers for nuclear missions: the B2A Spirit and the B-52H Stratofortress. Neither is maintained on day-to-day alert. The B-52 can deliver cruise missiles, gravity bombs, or a combination of both; the B-2 carries only bombs. And finally Submarine Launched Ballistic Missiles (SLBMs) onboard the Trident submarines, also known as SSBNs, contribute the important attributes of survivability, flexibility, and accuracy. The stealth of the SSBN in combination with the skill of its crew keeps the submarine undetectable in the vast ocean and therefore survivable. SSBNs provide flexibility in that they have the combination of mobility, range, and short flight times.

To this date only the B-52 and the B-2 provide the long-range conventional strike capability. But the improved accuracy of the ICBMs and SLBMs has allowed for the proposal of a conventional strike alternative.⁵⁹ The missiles provide a much shorter time from decision time to ordnance on target, but since this capability is only nuclear, it limits the options available to the policy makers and may reduce the credibility of deterrence.⁶⁰ The United States Navy has converted four SSBN to SSGN capable of carrying 154 TOMAHAWK strike missiles with rapid launch capability. The SSGN has the ability to remain on station, submerged, and undetectable off the coast of an adversary for extended dwell time.⁶¹ While these platforms add to the conventional

strike capabilities they do not completely address the gap in prompt, long range, conventional (non-nuclear) strike capability highlighted by the 2006 Quadrennial Defense Review (QDR). The QDR found that today's conventional forces could take from hours to days to deploy and strike a target.⁶²

A conventional global strike capability, such as The Conventional Trident Modification (CTM), could be the answer to this gap in capability. The CTM calls for two Trident D-5 missiles on each SSBN to be adapted to deliver conventional (non-nuclear) effects at global ranges.⁶³ The Trident Weapon System is uniquely suited for this mission in that it is survivable and responsive. Being responsive and survivable the Trident submarine with the CTM could defeat a broad range of threats at long range with little to no warning.⁶⁴ A similar program is being considered for the ICBMs.

The Way Ahead

In all of the above examples, the security of the United States is the goal. But just as important is the assurance to allies and friends. Countries like Japan, Taiwan, Turkey, South Korea, and Germany do not have nuclear weapons because they rely on the United States to provide that portion of their strategic deterrence.⁶⁵ The United States has a moral obligation, as the leading economic and military power, to continue to provide these security guarantees. But this only works if the United States maintains a credible nuclear deterrent. And this is why the United States needs to continue to maintain nuclear infrastructure as the third leg in the nation's nuclear triad.

Since in an actual nuclear exchange there are only losers, the only true victory comes through deterrence. Unfortunately, due to the nature of deterrence, the United States will not know if it is working but will only know when it fails. Even the end of the

Cold War was only a temporary victory. Because of the decline of the Russian conventional forces Russia maintains a pre-eminent military only due to its nuclear arsenal, and continues to conduct exercises with the United States as the hypothetical target.⁶⁶ The United States will never be able to say that it has won the nuclear war. There are more than 60 years of successful deterrence when dealing with nation states, but 9-11 stands as the first lost battle at the hands of terrorism. The United States must learn from this setback and adapt its nuclear strategy as the world environment changes.

As much as everyone would like nuclear weapons to go away, they are here to stay. And as long as there are nuclear weapons, the United States must continue to deter and dissuade its enemies and ensure its allies. There are several ways to achieve these goals, which the new nuclear deterrence strategies outline. The United States must continue to maintain a credible nuclear arsenal and at the same time lead the world in reducing the overall number of nuclear weapons. The United States should continue to reduce the overall inventory and eliminate or at least minimize one or more of the old legs of the triads. But while the nuclear inventory is reduced it must be modernized.

There is a need to encourage cooperation between the tripolar powers, China, Russia, and the United States, working together to reduce the proliferation of nuclear weapons while keeping a lid on the arms race. This cooperation should focus on dissuading rogue nations from their nuclear weapons ambitions. But, if unable to keep the rogue nations from obtaining a nuclear arsenal, the partners must contain them so they do not use these weapons or give them to terrorists. Terrorism will continue to be

the most challenging area in the nuclear deterrence. The United States will need to deter, frustrate, delay, and when necessary respond to attacks with overwhelming force to defend itself and its allies.

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